FIELD-READY



ORION

18 28V

User Manual

Z Microsystems

Regulatory

FCC INFORMATION

WARNING

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED AC PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS ALL THREE PRONGS CAN BE FULLY INSERTED



ORION 18 28V

1. Use the power and video cables supplied with the Orion to help prevent interference with radio and television reception. The use of cables and adapters may cause interference with electronic equipment in the vicinity of this unit.

2. This equipment has been tested and found to comply with the limits for Class "A" digital devices, pursuant to certain limits imposed by Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in when equipment is operated in commercial environments. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

3. Operation of this equipment in a residential area is likely to cause interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by Z Microsystems could void user's authority to operate the equipment

CAUTION

RISK OF ELECTRIC SHOCK – DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK OF UNIT). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

This symbol warns the user that insulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore it should be read carefully in order to avoid any problems.

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Starting Point

Congratulations on selecting a rugged field-ready Orion 18/28V

SHIPMENT CONTENTS

The Orion shipping box contains the following:

- The Orion FPD
- Video Signal Cable
- Power Connector
- Protective Lens (optional)
- User Manual
- 4 x 10-32 x 1.00L Screws
- 4 x #10 Flat Washers
- 4 x 10-32 Nut Plates

Remember to save your original shipping container and packing material to transport or ship the Orion.

USER MANUAL

The User Manual is also available on the Z Microsystems website (www.zmicro.com).

We recommend you read this manual as follows:

Carefully follow the instructions in the Installation chapter for hookup and initial control settings.

Refer to the Operation chapter for a complete description of all the user controls, and the Maintenance chapter for care and correcting any unforeseen problems with the system.

SYSTEM REQUIREMENTS

The Orion works with any computer system that provides industry standard screen formats from 640 x 480 to 1280 x 1024, with up to 85 Hz vertical sync. Required input power is 18-36 Volts DC with a power consumption of 110 Watts.

PRODUCT DESCRIPTION



The Orion 18 is a thin, lightweight, rugged direct-mount liquid crystal display.

Designed to replace 17" to 21" CRT's, the Orion mounts directly onto the rails of a standard 19" RETMA rack and protrudes only .75" from the rack.

The Orion is 14" (8U) high and has a 18" active display area, featuring up to 1280 x 1024 pixel resolution.

The Orion 18 display plugs-and-plays with workstations and PCs.

With active-matrix LCD technology to provide superior color, the lightweight aluminum construction and sharper resolution is perfect for shipboard, airborne, field deployments, industrial or lab applications where high resolution as well as weight and size are a driving factor.

Each Orion 18 features safety glass, front control panel, and low power usage that extends the life of the monitor as well as emanation protection that make it less susceptible to electro-magnetic interference.

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TOOLS REQUIRED

Required Tools and Equipment for Mechanical Installation

- #2 Phillips screwdriver



DANGER: *To avoid shock hazard:*

- *Do not remove the covers around the Orion.*
- *Do not connect or disconnect the Orion during an electrical storm.*
- *The power cord plug must be connected to a properly wired and grounded power outlet.*
- *Any equipment to which the Orion will be attached must also be connected to properly wired and grounded power outlets.*

PRECAUTIONS

In preparation to install the Orion, take the following precautionary steps:

- Turn off the electrical power to your computer.

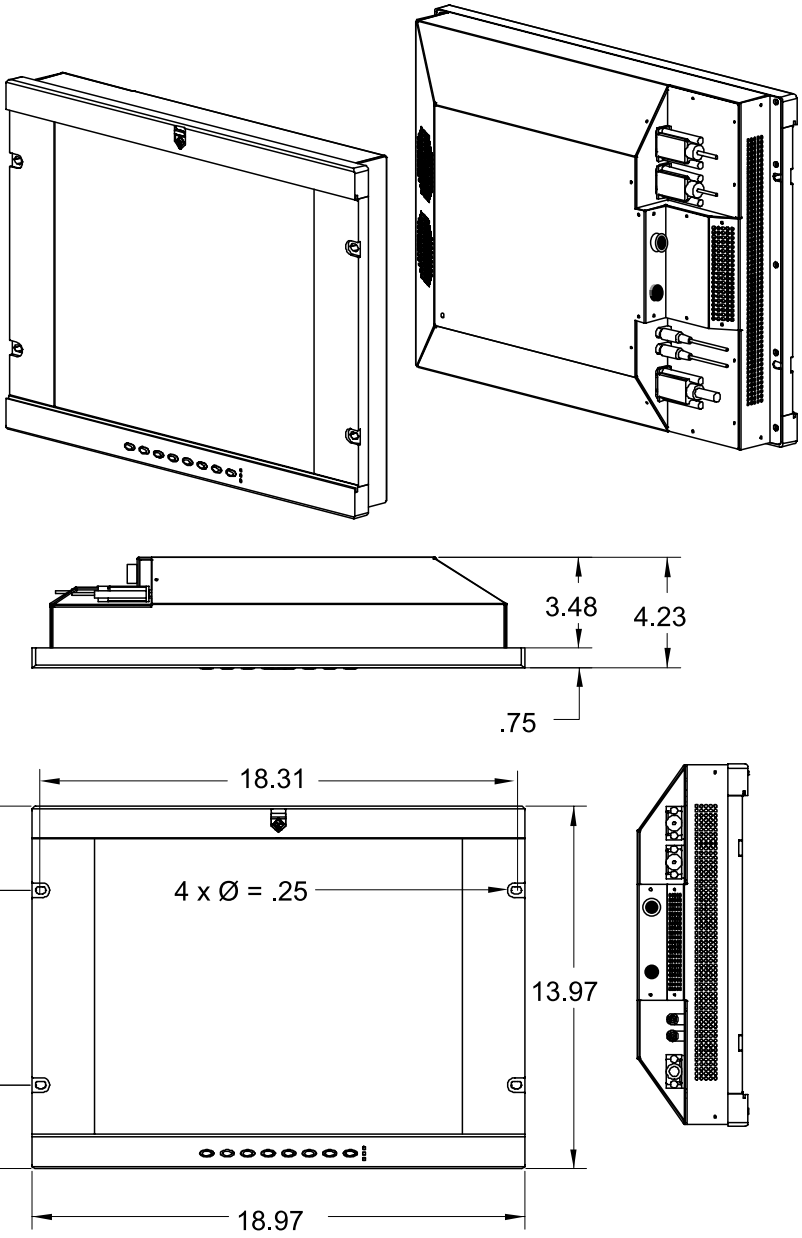


NOTE: For the fastest and easiest installation of the Orion, follow these steps in the sequence they are presented.

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DRAWING

The following drawing shows the Orion 18 from the back, side, top and front.



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Install Orion



The Orion 18 mounts directly to the rails of a standard 19" RETMA rack.

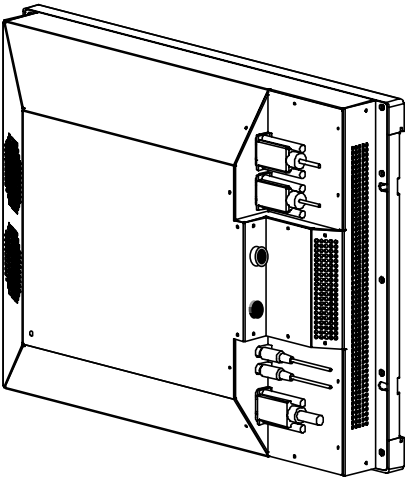


Use #10 Phillips screws or equivalent.



Use four pan head 10-32 screws to secure the Orion 18 to the frame.

REAR PANEL CONNECTORS (ORION 18 28V)



Top:

One 9-pin connector for future use.

One 9-pin host SIO (serial input/ output) connector.

Center:

Power in connector is in the center.

Fuse - 8 AMPS recommended.

Bottom:

One picture-in-picture (PIP) RCA connector,

One RCA connector for future use, and

One 15-pin RGB VGA connector.

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REMOVE PROTECTIVE LENS



The Orion 18 comes with an optional protective lens on front of the screen, which is used during shipping or long storage.

To remove the protective lens, slide the release catch on the top of the screen up.



While holding the release catch up, slide the protective lens to the side.



Note: The protective lens in front of the screen may be used during normal operations in situations where dust or sand is airborne.

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CONNECTING CABLES



NOTE: Connecting to nonstandard systems will require an adapter. To obtain a video adapter, contact Customer Services at Z Microsystems, Inc.



NOTE: Incorrect cable connections may result in irregular operation, damage display quality/components of the LCD module and/or shorten the unit's life. Always consult the computer system manual. Verify the system's compatibility to ensure proper operation.



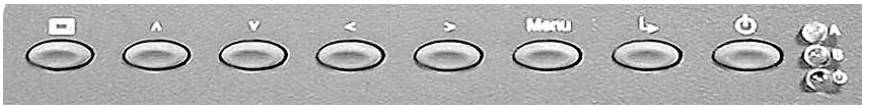
NOTE: Make sure the power connector is plugged in all the way on the back side of the display.

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CONTROLS

The Orion features push-button controls on the lower front of the display screen to adjust the brightness of the display, to change the image positioning on the screen, and to refine the screen image.

To complete the setup of the Orion, use the following controls to fine tune the image on the screen:



BUTTONS (from left to right)

PIP
Activate or deactivate the PIP window.

∧ UP
Move up through menu functions.

∨ DOWN
Move down through menu functions.

< LEFT
Move left to adjust value for functions.

> RIGHT
Move right to adjust value for functions.

Menu MENU
Activate “On-Screen Menu”. Also, use this button to activate the highlighted function.

BACK
Exit “On-Screen Menu” from main menu or return from the sub-menus to main menu.

STANDBY
Place the display in “Standby” or “Active” mode.

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CONTROLS

The three LED lights on the right of the control panel are labeled A, B and C. Their lighted functions are:

A -- Unused

B --- Picture-in-Picture (PIP) (green)

C -- Computer Graphics (green/ orange)

Green -- power and signal
Orange -- power and no signal
Off -- Standby mode

This section explains how to use the Orion control buttons to adjust the clarity of the display and image position on the screen. In particular it discusses:

- The function of each of the push-button controls.
- How to reset previously saved settings or return to factory settings.
- Tips and techniques.

The Orion control buttons allow the user to control image position, clarity and backlight operations; to store settings, and to revert to previously-saved or factory-saved settings.

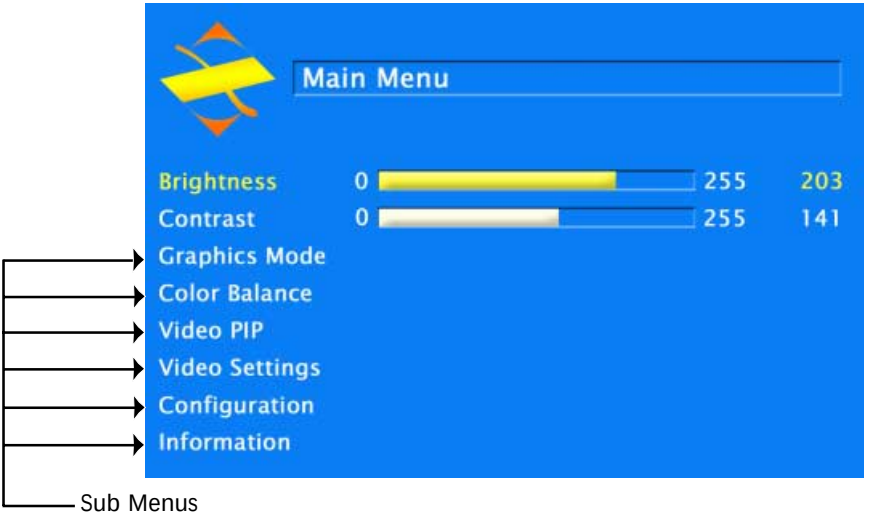
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ON-SCREEN MENU

On each slider bar, there is a minimum possible value (gray number) showing on the left side of the slider bar and there is a maximum possible value (gray number) showing on the right side of the slider bar.

The current value is displayed as the last number on the right side of the slider bar. Use the Left or Right buttons to adjust function to the desired value.

New user settings will be saved after exiting the Main Menu manually or by exiting the Menu by automatic time out.



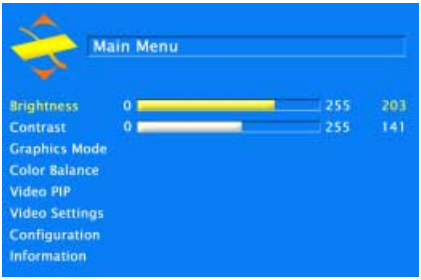
ACCESSING THE MENU SYSTEM

Using the display controls:

- If the display is blank, press the Menu button on the Display Controls. The Main Menu will be displayed.
- To change the highlighted line on the Main Menu, push the Down or Up button on the Display Controls.
- When a function is highlighted, push the Left or Right button to adjust the function's value.
- When a sub-menu is highlighted, push the Menu button to enter the sub-menu.
- To return to the main menu, push the Back button.

MENU ADJUSTMENT

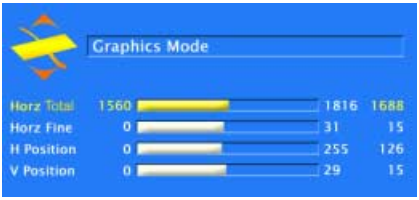
MAIN SCREEN



Brightness
Adjust Brightness on the primary image display.

Contrast
Adjust contrast on the primary image display.

GRAPHICS MODE



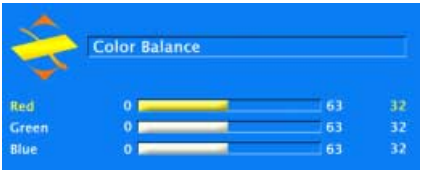
H Total
Adjust number of pixels per HSYNC on the primary image display

H Fine
Adjust sharpness on the primary image display

H Pos
Moves primary image display image RIGHT & LEFT

V Pos
Moves primary image display image UP & DOWN

COLOR BALANCE



Red

Adjust the color (Red) on the primary image

Green

Adjust the color (Green) on the primary image

Blue
Adjust the color (Blue) on the primary image

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MENU ADJUSTMENT

VIDEO PIP (PIP OPTION)



PIP Enable
Turns PIP window ON & OFF

PIP Size
Adjust PIP window size

PIP Horz

Moves PIP window RIGHT & LEFT

PIP Vert.
Moves PIP window UP & DOWN

Advanced PIP Settings Menu
PIP Configuration Menu

ADVANCED PIP SETTINGS MENU



PIP scaling
OFF Raw Video Decoder Image
ON Scaled Video Decoder Image

Square Pixels
OFF Rectangular Pixel Format
ON Square Pixel Format

PIP H Center
Moves the Active Video horizontally, left or right using the image processor

PIP V Center
Moves the Active Video vertically, up or down using the image processor

Window H
Horizontally increases or decreases the displayed PIP window size (this affects only the right side)

Window V
Vertically increases or decreases the displays PIP window size (this affects only the bottom side)

Pan Image H
Moves the Active Video horizontally left or right using the video decoder

PIP CONFIGURATION MENU



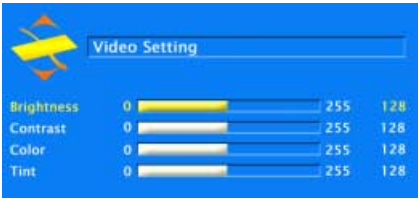
Interlaced
OFF Line Double de-interlacing
ON Merged de-interlacing

CCIR wide
OFF Broadcast television image
ON Non-Broadcast television image

PAL-M
Off Disables the PAL-M Override
ON Enables the PAL-M Override

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VIDEO PIP SETTING MENU



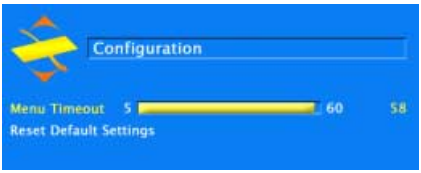
Brightness
Adjust brightness in PIP window

Contrast
Adjust contrast in PIP window

Color
Adjust color in PIP window

Tint
Adjust tint in PIP window

CONFIGURATION



Menu Timeout
Value in seconds that menu will be displayed

Reset Default Settings
All functions are reset to their default settings

INFORMATION



- No control panel adjustments can be made in this menu. Displays current Graphics Input Resolution. Vertical Refresh Rate and ZVC Firmware version.

MAINTENANCE OF FLAT PANEL DISPLAY



WARNING: Be sure to turn off the power before you perform any maintenance on the monitor.



WARNING: To avoid risk of electric shock, do not disassemble the monitor cabinet. Users cannot service the monitor. User maintenance is restricted to cleaning as explained below.

Unplug the monitor from the power outlet before cleaning.

- To clean the flat panel display screen, lightly dampen a soft, clean cloth with water or mild detergent. If possible, use a special screen cleaning tissue or solution suitable for the antistatic coating.
- To clean the monitor cabinet, use a cloth lightly dampened with a mild detergent.
- Never use flammable cleaning material to clean the flat panel display or any other electrical apparatus.

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NO IMAGE ON DISPLAY

What is the color of the Standby LED?

Black -- No power or in Standby mode:

- Make sure the power cable is plugged in.
- Connect the power cable to a 28 VDC source, which is turned ON.
- Wake up the display by pressing the Standby button.

Orange -- There is power, but no video signal:

- Make sure the video cable is plugged into the VGA Video connector.
- Make sure there is video signal coming out of the computer.

Green -- There is power and there is video signal:

- Make sure the video signal coming out from the computer is not a black image.
- Possible hardware failure. Contact Z Microsystems Customer Support.

NO IMAGE ON PIP WINDOW (PIP OPTION)

To activate PIP window, refer to page 11 or 15.

What is the color of the PIP LED (the "B" LED)?

Black -- PIP function is OFF or there is no video signal.

- Make sure the power cable is plugged in.
- Connect the power cable to a 28 VDC source, which is turned ON.
- Make sure the video (RCA) cable is plugged into the "Video In" connector.
- Make sure there is video signal coming out from the source, such as VCR player or DVD player, etc.

Green -- PIP function is ON and there is a video signal.

- It is possible the PIP is being hidden under an overlay memory display, such as the "On Screen Menu". Turn OFF overlay display or move the PIP window (see page 15) to a different location than the overlay display.
- Make sure PIP Size is not set to 0.
- Possible hardware failure. Contact Z Microsystems Customer Service.

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ORION18 ZS/VP -HB (28V)

SIZE

Display	18”
Image Size	1280 pixels by 1024 pixels
Pixel Configuration	RGB Vertical Stripe
Video Input	Analog RGB 0.7Vp-p/75 Ohm
Separate Sync	TTL level
Composite Sync	TTL level
Sync on Green	Video 0.3 V Negative
Horizontal Sync	Positive/Negative
Vertical Sync	Positive/Negative
Horizontal Frequency	24 kHz to 80 kHz
Vertical Frequency	56 Hz to 85 Hz
Pixel Frequency	20 MHz to 140 MHz
Color Palette	16.7 million colors
Contrast Ratio	300:1 typical
Pixel Pitch	.2805 mm x .2805 mm
Luminance	480cd/m2 (with EMI conductive coating)
Diagonal Dim.	18.1”
Horizontal	359 mm
Vertical	287 mm
Viewing Angle	Vertical +70º, -40º; Horizontal +/- 70º
Optical Resp. Time	10 ms rise, 35 ms decay

POWER

Power Consumption	110 W
Power Supply	18-36 Volts DC

PICTURE IN PICTURE

Image Size	Adjustable up to 1280 pixels by 960 pixels
Image Positioning	The Picture in Picture image can be positioned anywhere in the 1280 x 1024 display window.
Video Input	Accepts NTSC M/4.43, PAL M/N/B/G/H/I/D composite video formats with auto detection
Color Palette	16.7 million colors

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Specifications

CABLING

Display Cable	6’ cable, HD 15 (optional 13W3 or BNC)

TOTAL PACKAGING SIZE

Size	14.0” H x 19’ W x 4.25” D

WEIGHT

Total Assembled Weight	20 lbs.

ENVIRONMENTAL

Operating Temp.	0 to +50 Celsius
Nonoperating Temp.	-25 to +60 Celsius
Operating Humidity	5% to 95% Non-condensing
Non-operating Humidity	5% to 95% Non-condensing
Non-operating Attitude	0 to 40,000 ft.
Operating Altitude	0 to 10,000 ft.

RELIABILITY SPECIFICATIONS

MTBF	20,000 hrs with backlight change at 10,000 hrs.
QA Compliance	ISO 9000
Maintainability	<30 minutes

REGULATORY

EMI/RR	FCC Class A

1 YEAR STANDARD WARRANTY

Extent of Limited Warranty

1. Z Microsystems, Inc. (Z Micro) warrants to the end-user that Z Micro products will be free from defects in materials and workmanship for a specified time after the date of purchase. The duration of this limited warranty is stated above. Certain additional conditions and limitations of Z Micro's warranty are stated in the User Guide. The warranty on software products applies only to the media upon which the product is recorded. Z Micro does not warrant the operation of any product to be uninterrupted or error free.
2. Z Micro's limited warranty covers only those defects which arise as a result of normal use of the product, and do not apply to any: Improper or inadequate maintenance; Hardware add-in boards, software, or interfacing not supplied by Z Micro; Unauthorized modification or misuse; Operation outside the product's environmental specifications; or improper maintenance.
3. If Z Micro receives, during the applicable warranty period, notice of a defect in a hardware product which is covered by Z Micro's warranty, Z Micro shall either repair or replace the product, at its discretion. Any replacement product may be either new or like new, provided that it has functionality at least equal to that of the product being replaced.
4. If Z Micro is unable to repair or replace, as applicable, a defective product which is covered by Z Micro's warranty, Z Micro shall, within a reasonable time after being notified of the defect, refund the purchase price for the product, provided the product is returned.
5. This Limited Warranty Statement gives the customer specific legal rights. You may also have other rights which vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world.
6. Z Micro offers Extended Warranties and Service Plans. For more information, call Customer Service at 1800-524-7926 x 232.

Limitations of Warranty

1. To the extent that this Limited Warranty Statement is inconsistent with the law of the locality where the customer uses the Z Micro product, this Limited Warranty Statement shall be deemed modified to be consistent with such local law. Under such local law, certain limitations of this Limited Warranty Statement may not apply to the customer. For example, some states in the United States, as well as some governments outside the United States (including provinces in Canada), may: Preclude the disclaimers and limitations in this Warranty Statement from limiting the statutory rights of a consumer (for example, Australia and the United Kingdom); Otherwise restrict the ability of a manufacturer to make such disclaimers or impose

such limitations; Grant the customer additional warranty rights, specify the duration of implied warranties which the manufacturer cannot disclaim, or not allow limitations on how long an implied warranty lasts.

2. To the extent allowed by local law, the remedies provided in this Warranty Statement are the customer's sole and exclusive remedies.

Limitations of Liability

EXCEPT FOR THE OBLIGATIONS SPECIFICALLY SET FORTH IN THIS WARRANTY STATEMENT, IN NO EVENT SHALL Z MICRO BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY AND WHETHER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

FAQ'S -- Frequently Asked Questions

What equipment is covered?	The packing slip that comes with the equipment lists the equipment covered.
What failures are covered?	Any type of workmanship or equipment hardware failures arising from normal use of the equipment is covered. The only exclusions are for problems related to abuse, acts of god, or acts of war. Software problems are not covered.
Who do I call?	Telephone or fax the Customer Service Dept. at Z Microsystems: (858) 657-1000 ext. 232 (858) 657-1001 (fax) Please have the equipment serial number and a description of the problem ready when you call. It is also handy to know the version of the operating system you are using.

How long does it take?	Your equipment should be returned to you within 30 days of its receipt at the factory. In many cases it will be less (our goal is to have your equipment on its way back within 5 days). However, if the damaged equipment has to be serviced by the original manufacturer (Seagate, NEC, for example), it may take longer.
Are there any extra costs?	The only per incident cost you will incur is Freight In to return the equipment to the factory. Your standard warranty covers all of the costs associated with the repair and the return shipment of the covered equipment.
What about classified data?	DO NOT send any data storage equipment that contains classified material. Remove the inner disks of any drive with classified information. Send only the outer casing of the disk drive. There will be a replacement charge for classified drives even if the drive is still under warranty.

FURTHER HELP

If you are unable to correct any problem yourself, contact:

Z Microsystems at:
(858) 657-1000 x 232.
Fax: (858) 657-1001
Website: http://www.zmicro.com

Before calling, please have available as much of the following information as possible:

1. Model and serial number from the label on the monitor.
2. Purchase Order.
3. Description of problem.
4. Computer type and model.
5. System configuration (hardware fitted, etc.).
6. System BIOS version number.
7. Operating System and version number.
8. Display driver version number.
9. Video Adapter type.



***NOTE:** If possible, stay by the computer. The Z Microsystems Technical Support Representative may wish to go through the problem over the telephone.*



***NOTE:** More help, late-breaking news and details of the latest accessories for these products may be found on the worldwide web at: http://www.zmicro.com*

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REPLACING PARTS

If the Z Microsystems Technical Support Engineer determines that the product needs to be replaced, a Customer Service Representative will issue a Return Material Authorization (RMA) number and return address.

A RMA number is required to return a product to Z Microsystems, regardless of the reason for the return.

The following information is required when returning Z Microsystems products:

1. Model number
2. Serial number
3. Customer ship-to address and any special shipping requirements
4. Specific and detailed description of the problem
5. P.O. Number if out of warranty

PROVIDING FEEDBACK

We value your feedback on our products, their performance, any problems and constructive suggestions. Please send such productive information in writing to:

Z Microsystems
Customer Service
5945 Pacific Center Blvd.
Suite 509
San Diego, CA 92121-4309

or

http://www.zmicro.com
E-Mail: support@zmicro.com



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Fax: (858) 657-1001

Website: http://www.zmicro.com

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Apollo


Command Console


Hydra


StarGate


Glider


Gemini


Eclipse 17

Z Microsystems

The Leader In
Rugged Displays

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